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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,295	02/09/2001	Masaya Ishida	299002052000	6783

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EXAMINER
TRAN, MINH LOAN

ART UNIT	PAPER NUMBER
2826	

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/780,295	Applicant(s) ISHIDA, MASAYA	
	Examiner Minhloan T. Tran	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) *9 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1-8 in Paper No. 7 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement filed 05/29/2001 has been considered.

Oath/Declaration

4. The oath or declaration filed on 05/10/2001 is acceptable.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3, 7, 8 are rejected under 35 U.S.C. 102(a) as being anticipated by Orita et al. (6,117,700).

With regard to claims 1, 7, 8, Orita et al. discloses a semiconductor light emitting

device comprising a substrate 11; an n-type GaN layer 13; an InGaN multiple quantum well active layer 15; a p-type AlGaN layer 16B having a thickness of 0.7 μm and a p-type GaN contact layer 17B being provided on the MQW active layer 15; wherein the p-type GaN contact layer 17B contains about 1 x 10 19 cm –3 hydrogen concentration. Note figures 2, 9 and lines 33-45 in column 8 of Orita et al.

With regard to claim 3, Orita et al. discloses a p-type electrode 18 contains atoms selected from the group consisting of Ti, Zr, La, Nb. Note lines 16-31 in column 9 and figures 2, 9 of Orita et al.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 4, 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orita et al. (6,117,700).

With regard to claim 2, Orita et al. discloses a p-type GaN layer 17B contains Mg and the Mg concentration is 2×10^{19} cm $^{-3}$. Note lines 6 and 7 in column 6 of Orita et al. However, it would have been obvious to one of ordinary skill in the art to form the p-type GaN layer 17B of Orita et al. having the Mg concentration is greater than or equal to about 4×10^{19} cm $^{-3}$ and less than or equal to about 1×10^{21} cm $^{-3}$ in order to obtain a good ohmic contact with the p-type electrode.

With regard to claim 4, Orita et al. discloses a p-type electrode 18 contains atoms selected from the group consisting of Ti, Zr, La, Nb. Note lines 16-31 in column 9 and figures 2, 9 of Orita et al.

With regard to claims 5 and 6, Orita et al. does not disclose the n-type layer having hydrogen concentration is less than or equal to 1×10^{17} cm $^{-3}$. However, it would have been obvious to one of ordinary skill in the art to form the n-type GaN layer 13 of Orita et al. having the hydrogen concentration is **less than** or equal to 1×10^{17} cm $^{-3}$ in order to decrease the resistance of the n-type layer. Note that the hydrogen concentration is less than 1×10^{17} cm $^{-3}$ i.e. hydrogen concentration can be zero.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minhloan T. Tran whose telephone number is (703) 308-4919. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

12/2002
mlt

Minhloan T. Tran
Primary Examiner
Art Unit 2826